Recycling Plants
Tönsmeier Wertstoffe GmbH & Co. KG

Stationary fire protection

Case Study
Two successful enterprises.

Tönsmeier and Rosenbauer – leaders in their fields.

Tönsmeier – environmental service provider for ecological and economical solutions.

Tönsmeier, a family-run environmental service provider and energy supplier with more than 30 treatment, sorting, and recycling plants in Germany, the Netherlands, Poland, and Austria makes a significant contribution to preserving natural resources. Across Europe, over 3,500 employees with around 1,100 vehicles support municipal clients, dual system carriers, as well as commercial and industrial customers.

At the Oppin and Porta Westfalica sites, around 250,000 tons of light packaging materials are sorted annually, consisting of foil, ferrous and non-ferrous metals, beverage cartons and paper, amongst other materials. In Oppin, Tönsmeier also processes waste into refuse-derived fuels. These are used in energy-intensive industrial processes such as in the cement industry and replace finite primary energy sources such as crude oil, natural gas, or coal.
Fire extinguishing system for Tönsmeier recycling plants.

Demanding initial situation.

In Oppin, Tönsmeier operates an ultra-modern mechanical treatment plant, amongst others, for the recovery of waste. The delivered material – mostly plastic and paper – is highly flammable and represents a high fire hazard. A fire would destroy the expensive systems, lead to long production downtimes, and strain the environment. Here, in the framework of stationary fire protection, Rosenbauer has developed a solution that protects people, materials, systems, and the environment by reacting immediately in an emergency and preventing the breakout of a large fire in its initial stage.

Customized solution.

In order to effectively supplement the existing extinguishing and alarm structures, Rosenbauer installed three powerful turret extinguishing systems, which are combined with a precise infrared detection system. The system detects temperature changes and, in the event of increasing temperatures, immediately ensures cooling by means of foam. Compared to conventional fire protection systems which only activate once a certain minimum temperature has been reached on the ceiling of the storage hall, the Rosenbauer system can already intervene before a fire breaks out. Thus, the risk of production downtime is drastically reduced. Through the use of relatively small and targeted amounts of extinguishing agent, contaminated materials can easily and quickly be removed from the hall. Therefore, ongoing operations are not at risk.
Protection and safety around the clock.

At Oppin there are three extinguishing areas. For one the general delivery hall, which is used for pre-storage. Secondly the delivery hall for light packaging materials (LVP). And thirdly the extinguishing area of the substitute fuel storage and paper hall.

The delivery areas and the storage hall are protected around the clock by the turret extinguishing systems. If the installed infrared system detects a hot spot, its coordinates are sent to the turret. It aims automatically, applies the extinguishing agent in a targeted way, and cools down the hot spot with oscillating movements. The Tönsmeier plants in Porta Westfalica and Paderborn also use Rosenbauer turret extinguishing systems for the protection of people, machines, and the environment.

Advantages:

- Customized extinguishing systems from a single supplier
- Perfectly matched technology
- Reliable fire protection around the clock (24/7)
- Construction/design based on current VdS directives

Installed technology:

- Pump system for pressure increase
- Foam proportioning system
- Storage tank for foaming agent
- Valve stations
- Extinguishing system control room
- Main distributor
- Overground water storage tank with a volume of 150,000 l

The plant control room was mounted in a container. A reservoir with up to 150,000 l capacity was built for the extinguishing water supply. For this extinguishing system an RM65 turret was used, which can be designed with an output of up to 6,000 l/min.
Rosenbauer is fire protection. For nearly 150 years. Today, Rosenbauer is one of the leading global manufacturers of municipal fire fighting vehicles, aerials, special airport and industrial vehicles as well as stationary and semi-stationary fire protection systems. Professional fire departments, voluntary fire departments, industrial and airport fire departments as well as planning and engineering offices around the globe trust the cutting edge technological solutions from Rosenbauer.

Stationary extinguishing system from Rosenbauer are customized solutions with highly efficient firefighting equipment for the protection of people, facilities and objects.

They are used where conventionally designed sprinkler and water spray systems do not offer optimum protection. The fire fighting concepts are adapted to the individual protection objective.

### Rosenbauer turret extinguishing systems for Tönsmeier waste treatment plants

- Extinguishing systems with RM65 turret and temperature monitoring
- Hot-spot detection and targeted extinguishing agent use
- Output rate: up to 2,400 l/min
- Extinguishing agent: foam

Rosenbauer – powerful extinguishing systems and individual solutions to protect people and material assets.
"For us, Rosenbauer’s turret extinguishing systems are an important component in a package of measures, with which we protect people, materials, and the environment from harmful events. We are convinced that this technology – which identifies noticeable temperature fluctuations already at an early stage – offers the best protection for us. We would prefer it if the high tech systems did not have to prove their performance strengths."

Peter Berlekamp, 
Project Manager Fire Protection at Tönsmeier

"We have already looked very intensively at different system types in advance and have evaluated them according to the criteria that are important to us. The turret extinguishing systems from Rosenbauer scored in all relevant matters. The systems are powerful, technologically sophisticated, and easy to use. Overall, the customized solutions that were developed for the Oppin, Porta Westfalica and Paderborn sites offer the best possible protection."

Andreas Thiel, 
Branch Manager LVP Sorting Plants in the “recyclable material” specialist center of the Tönsmeier Group